



Global Alliance for Rabies Control
Annual Report 2015



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LETTER FROM THE EXECUTIVE DIRECTOR

Since its inception in 2007, the Global Alliance for Rabies Control has had a singular vision, to prevent human deaths from rabies and relieve the burden of rabies in other animal populations.

In 2009, working with key stakeholders, GARC undertook an in-depth analysis of the rabies landscape and global rabies policies that were preventing progress in rabies control. Some of the key barriers identified were the lack of data on the human and economic burden of the disease, poor coordination of national and international efforts, a lack of awareness concerning the most appropriate and effective rabies control mechanisms, limited availability of capacity to deliver vaccines, few successful demonstration projects and very limited engagement of policy makers in endemic countries. This analysis informed the work of GARC and established its applied research priorities and advocacy efforts.

Significant progress has been made. Demonstration projects led by national governments and supported by the international community are showing that rabies can be controlled in endemic, resource-poor countries in Asia and Africa. Applied research has addressed communication and education efforts, the challenges of limited intersectoral collaboration and the burden of the disease.

The challenge today is to translate the evidence base established over the last eight years to support national governments with the control of the disease, while advocating for an international commitment to end deaths from rabies.

With this challenge in mind, GARC's focus in 2015 was towards programmatic advocacy activities to move rabies up the global health agenda, the development of tools to build skills and knowledge, and regional networks to support national control efforts. As GARC's involvement in demonstration projects moves towards an end, the successes and lessons learnt will support the broader advocacy efforts envisaged for 2016.



Professor Louis Nel



MOVING RABIES UP THE GLOBAL HEALTH AGENDA

Rabies is one of the World Health Organization's (WHO's) 17 Neglected Tropical Diseases, and has been chronically and tragically underfunded by international bodies as well as national and

regional governments. In 2015, GARC continued to work with its partners to raise the profile of rabies among policy makers and health donors.

BUILDING THE SCIENTIFIC CASE FOR PRIORITIZATION

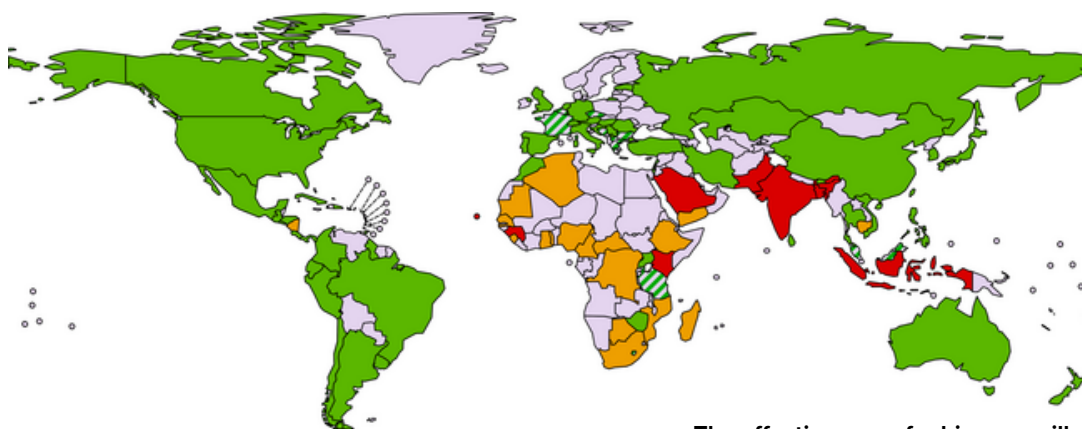
GARC's research team and its partners published a number of studies in 2015 that highlighted the global rabies situation. These peer-reviewed papers covered rabies reporting systems, the global burden of rabies – both in human and financial terms, the difficulties involved in estimating this burden, and an overview of the global epidemiology of rabies.

Global survey of rabies reporting systems

“Because most rabies endemic countries don't collect accurate data on the number of people dying from the virus, they fail to invest enough in its control. An appreciation of the scale of the problem can help countries prioritize control of this disease.” - Dr Louise Taylor, Scientific Director, GARC

The first global survey of rabies reporting systems, published in February, highlighted a lack of preparedness against this deadly disease across Africa and Asia.

Across the 91 countries surveyed by GARC, effective reporting systems were found almost exclusively where rabies control measures are well implemented. Across Africa and Asia, where rabies kills the most people, most reporting systems were judged to be ineffective.



The effectiveness of rabies surveillance globally. Legend:
green = human rabies is notifiable and surveillance is effective;
orange = human rabies is notifiable, but surveillance is ineffective;
grey/green striped = human rabies is notifiable, but no information on effectiveness was supplied;
red = human rabies is not notifiable; grey = no survey data available.

The survey found that while the reporting of human rabies cases is a legal requirement in many countries, the systems to do this vary enormously and are often poorly enforced. The survey also identified a number of reasons for the lack of accurate data, including rabies not being a health priority, inadequate training of medical staff, a lack of resources to implement reporting, and the problem that many poor victims die without ever accessing the health system.

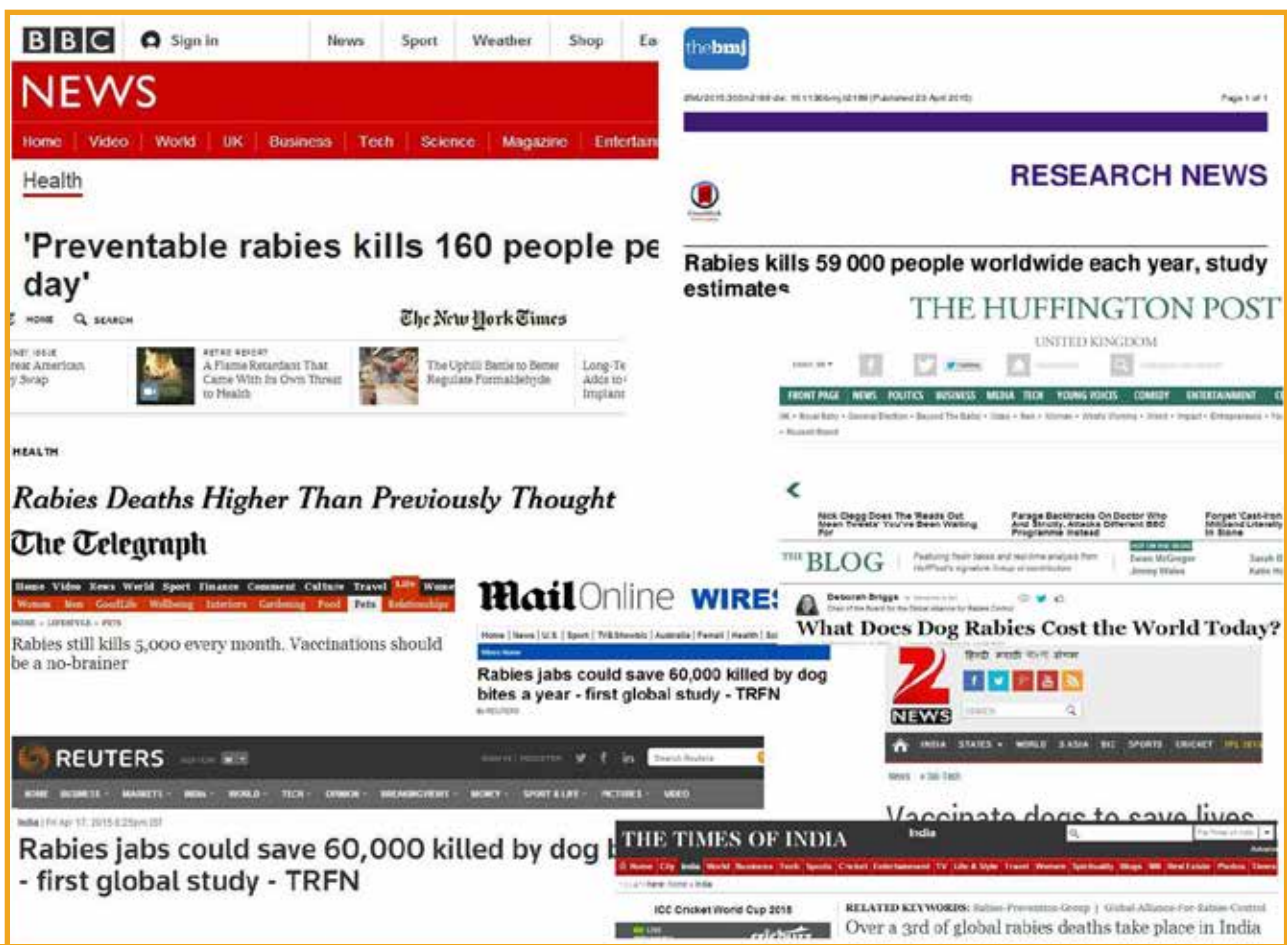
Reference: Taylor, L. H., Knopf, L. & the Partners for Rabies Prevention. (2015) Surveillance of Human Rabies by National Authorities - A Global Survey. Zoonoses and Public Health.

Overall, 41% of the population covered by this survey - around 2.5 billion people - live in countries where there is no system, or an ineffective rabies reporting system.

Estimating the global burden of endemic canine rabies

Rabies is a notoriously underreported disease in low-income countries, leading to a cycle of neglect. This is because limited information as to the true cost of the disease results in low prioritization for rabies disease control measures.

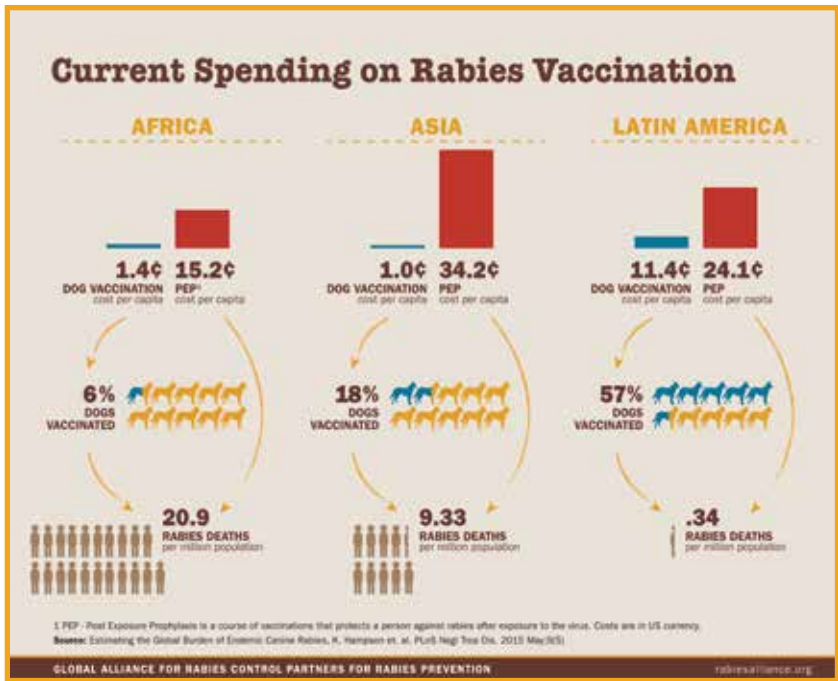
In April, the GARC Partners for Rabies Prevention group published the first study to estimate the public health and economic burden of rabies transmitted by dogs, globally and on a country-by-country basis, allowing an objective assessment of how much this preventable disease costs endemic countries.



This groundbreaking study, which gathered significant media attention from across the world, found that 160 people die every single day from canine-transmitted rabies, leading to an estimated 59,000 preventable deaths annually. The study also shows that annual economic losses due to the disease are around 8.6 billion US dollars, mostly due to premature deaths, but also because of spending on human vaccines, lost income for victims of animal bites and other costs.

59,000 die annually – and yearly cost of the disease is USD 8.6 billion

The study is an essential step towards improved control and eventual elimination of rabies. An understanding of the actual burden helps us determine and advocate for the resources needed to tackle this fatal disease.



GARC’s research team representation of the global burden study data shows that human deaths occur where investment in dog vaccination is poorest. Spending on vaccinating humans is not sufficient to counteract this deficit.

Reference: Hampson, K., Coudeville, L., Lembo, T., Sambo, M., Kieffer, A., Attlan, M., Barrat, J., Blanton, J. D., Briggs, D. J., Cleaveland, S., Costa, P., Freuling, C. M., Hiby, E., Knopf, L., Leanes, F., Meslin, F. X., Metlin, A., Miranda, M. E., Muller, T., Nel, L. H., Recuenco, S., Rupprecht, C. E., Schumacher, C., Taylor, L., Vigilato, M. A., Zinsstag, J., Dushoff, J. & Global Alliance for Rabies Control Partners for Rabies Prevention. (2015) Estimating the global burden of endemic canine rabies. PLoS Negl Trop Dis, 9(4), e0003709

Difficulties in estimating the human burden of canine rabies

The global burden study highlighted a discrepancy with existing global burden of disease estimates, in which rabies was given a lower disease burden estimate, and an even larger discrepancy with the surveillance data most often reported by countries.

The global burden study was followed by a paper that outlined the difficulties in accurately assessing the burden of rabies. This showed that the approach usually used, passive surveillance that relies on reporting of cases as they occur, gave much poorer data than the much rarer and more intensive active surveillance, which involves community-based searches for cases.

For now we must rely on estimates of the burden from models using data from very few active surveillance studies. The findings suggest that passive surveillance results in widespread underreporting.

Reference: Taylor, L. H., Hampson, K., Fahrion, A., Abela-Ridder, B., & Nel, L. H. (2015) Difficulties in Estimating the Human Burden of Canine Rabies. Acta Trop. Dec 22 / doi: 10.1016/j.actatropica.2015.12.007

A large proportion of countries in Africa and Asia report less than 10% of estimated rabies deaths

Promoting progress made

GARC's research team's efforts ended the year on a positive note with two publications sharing progress made, summarising the impact that canine rabies has on public health globally, the recent progress in its control through international partnerships, and the possibilities for its elimination. Tools and support are available from the international community to help countries move progressively toward canine rabies elimination, and there is optimism that global freedom from canine rabies can be achieved within the next few decades.

There is optimism that global freedom from canine rabies can be achieved within the next few decades.

Reference: Taylor, L. H., & Nel, L. H. (2015) Global epidemiology of canine rabies: past, present, and future prospects. Veterinary Medicine: Research and Reports, 6, 361-371.

Reference: Nel, L.H., Taylor, L.H, Balaram, D.& Doyle, K.A.S. (2015) Global Partnerships are critical to advance the control of Neglected Zoonotic Diseases: The case of the Global Alliance for Rabies Control. Acta Tropica. Oct 28 / doi: 10.1016/j.actatropica.2015.10.014

MAKING THE CASE FOR INVESTMENT IN RABIES ELIMINATION

On World Rabies Day (September 28), GARC and the three global intergovernmental organizations (the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE)) published the *Rationale for investing in the global elimination of dog-mediated human rabies*. This advocacy tool raises the profile of rabies by outlining the human and economic case for increased investment in the disease.

The document calls on countries to invest in cost-effective and sustainable control programs,

particularly the mass vaccination of dogs, and makes the case that global freedom from dog-mediated human rabies is feasible.

However, to achieve this, countries need to invest in community involvement and strengthen local training initiatives to conduct coordinated dog vaccination campaigns.

https://rabiesalliance.org/uploads/media/Scientific_resources/WHO_Rationale_Rabies_2015_2.pdf



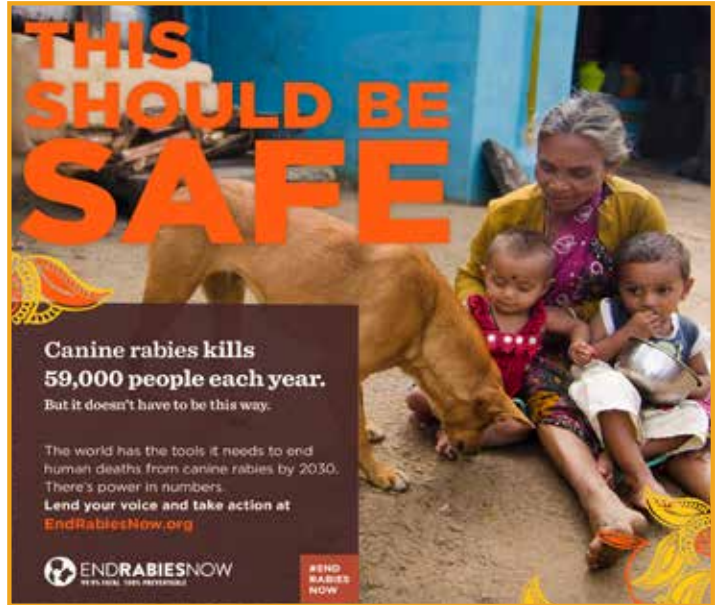
RATIONALE FOR INVESTING
IN THE GLOBAL ELIMINATION OF
DOG-MEDIATED HUMAN RABIES

NEW CAMPAIGN TO ELIMINATE DEATHS BY 2030 - END RABIES NOW

In November GARC launched a multi-partner campaign *End Rabies Now*, calling for an end to human deaths from dog-transmitted rabies by 2030.

This global campaign will raise awareness in Europe and the United States, where canine rabies has largely been eliminated, in order to ensure that rabies control programs are prioritised within international development spending.

In the first couple of months after the launch of the campaign almost 700 individuals took the online pledge to support the end of rabies deaths and signed up for the e-newsletter. By the end of the year, twelve international organizations had joined as campaign partners.



“I understand that the persistence of rabies as a modern-day scourge is due to our collective failure of responsibility. We can, and must, end the suffering that rabies causes, for the sake of both our human and animal friends.”

Jane Goodall PhD, DBE
 Founder - the Jane Goodall Institute & UN Messenger of Peace

Current campaign partners:



2030 ELIMINATION TARGET AND VISION AGREED AT GLOBAL MEETING

Rabies stakeholders from around the world gathered in Geneva on 10-11th December 2015 for a landmark meeting, entitled “Global elimination of dog-mediated human rabies: The time is now”.

Delegates included key representatives of Ministries of Health, Veterinary Services and national rabies coordinating bodies; rabies experts from the veterinary and the human health sectors; as well as international organizations, policy-makers, non-governmental organizations, donors and the private sector.



Margaret Chan, Director General of the WHO, with Louis Nel, GARC Executive Director at the conference © WHO

Dr Margaret Chan, the Director-General of the WHO, started with a very simple message: “Rabies belongs in the history books. This event will help put it there.”

The national delegates, the WHO, OIE and FAO agreed on a new global framework to eliminate rabies, to achieve the strategic vision of zero deaths from dog mediated rabies by 2030—a key goal of the End Rabies Now campaign.

There were strong calls for the development and strengthening of regional control plans. In this context the Canine Rabies Blueprint and Stepwise Approach towards Rabies Elimination – both GARC-led initiatives -were recognized as valuable tools to support countries in planning, implementing and assessing progress towards elimination. The increase in rabies awareness due to the past 9 years of World Rabies Day was highlighted, and the new End Rabies Now campaign was endorsed.

Vision: Zero deaths from dog mediated rabies by 2030.

The meeting embodied the current momentum in rabies control, and highlighted the evidence that canine rabies elimination is feasible, equitable and that dog vaccination is the only long-term solution to end human rabies deaths. All the international institutions are aligned with a clear multi-sectoral approach.

Reference: <https://rabiesalliance.org/media/news/the-global-framework-for-dog-mediated-rabies-elimination>

A GLOBAL DAY OF AWARENESS - WORLD RABIES DAY

Created and coordinated annually by GARC, World Rabies Day, September 28th, is a global day of awareness, with events held all over the world.

It focuses on rabies endemic countries, to increase community awareness of the disease and its prevention. World Rabies Day also raises the profile of national and local control programs and acts as a springboard for year-round capacity building and awareness.

2015 showed the largest global participation so far, with events registered on GARC's online platform in 58 different countries – an impressive 16% increase on 2014. GARC also promoted World Rabies Day in the global media with its partners, and created communications toolkits and country packages to assist event holders, including national governments, with their World Rabies Day events.

Some events from around the world

Smiling faces holding up copies of the Africa Outreach Poster. Dr. Carole Asanyo, a veterinarian based in Mombasa, Kenya is in the background. Our thanks to Dr. Kenneth Wameyo of the Kenya Veterinary Association for sharing the photo



*Bike Rally
Bhaktapur, Nepal*

Winners of the Global One Health Challenge for World Rabies Day 2014, a team of veterinary and medical students from St George's University, Grenada, who won a trip to the World Medical Association/World Veterinary Association Global Conference on One Health in Madrid, Spain.



GARC teamed up with Netcare in South Africa to develop the *Want a Friend? Be a Friend!* interactive booklet to teach children how to interact with dogs and read their body language in order to avoid being bitten. Young children are typically the ones most affected by dogs, as their actions around dogs can often lead to dog bites. The graphics will also help illiterate individuals to understand the core concepts contained in the booklet. The booklet is currently available in English, Shona, Zulu and Portuguese.

As part of World Rabies Day, GARC staff visited a school in the North-West Province of South Africa for an interactive learning session for 200 children who were given booklets.

GARC also sent, on request, 100 booklets to the Swaziland Animal Welfare Society (SAWS) to be distributed at their project areas in Swaziland.



*Terence Scott of GARC at the Lukunguni Clinic, Victoria Falls - GARC donated 26 *Want a Friend? Be a Friend!* booklets to the Head Sister to give to children at the clinic, which was welcomed, as registers showed that bite cases and rabies cases were prevalent in the area.*



Prize-winning photo by Edgar Vilca Carhuapoma, Huamanga-Ayacucho, Perú - GARC supported the second year of the Pan-American World Rabies Day Initiative, a regional photo competition.

RESOURCES TO BUILD SKILLS AND KNOWLEDGE

New resources were created to meet the needs of different audiences and existing resources were updated based on feedback and developments in the field. All of these resources are used as part of GARC's broader capacity building work with governments and professionals, and others will be added as further needs are identified.

COMMUNITY EDUCATION TOOLS

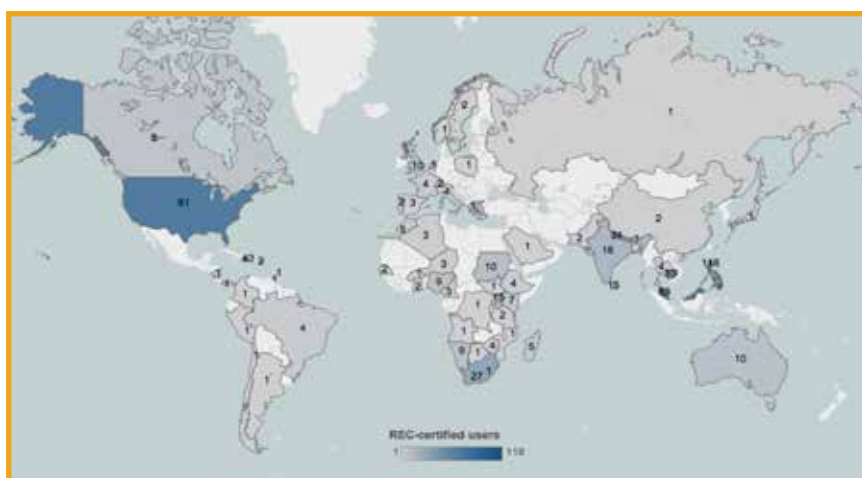
An essential element of rabies prevention involves increasing awareness among the community, to help people to take preventive measures, and to protect themselves if exposed to the virus. There is a great need for professionals connected to the fields of rabies, health, education and community development to be able to understand and communicate accurate lifesaving information and skills.

Ideally this kind of training would be done face-to-face, as part of other rabies control and prevention initiatives such as mass dog vaccination. However, this is not always possible, and online learning allows those who cannot access such programs to equip themselves with important skills and knowledge.

GARC has launched the GARC Education Platform to meet this need. The first two courses, one for community educators and one for animal vaccinators, are available online. They are also available offline through training courses organised by GARC.

Rabies Educator Certificate

The Rabies Educator Certificate (REC) was the first free online course to be established, with the official launch in February 2015 at the Asian rabies expert meeting in Thailand. The REC helps to effectively disseminate accurate, life-saving information regarding rabies to at-risk communities throughout the world. French and Spanish versions of the online course have also been launched.



At the end of 2015, we have **657 REC-certified users from 63 countries.**

The REC has been used by rabies stakeholders in offline training workshops:

Haiti: In September, GARC, the US Centers for Disease Control and Prevention (CDC) and other international partners attended a One Health workshop on the control and prevention of rabies in Haiti. GARC worked with Haitian professionals to train 47 para-veterinarians and veterinary technicians who travelled from across Haiti to complete the REC course, which was translated into Creole by the United States Naval Ship Comfort humanitarian mission staff who were also partners.



Mr Apollon Destine from the Haiti government discussing the finer points on “how to effectively communicate life saving information with community members”

During the course, one participant recognized the symptoms of rabies as those that were seen in a young child in his village. The participant was provided with rabies educational materials and went to his village to collect more information, where it was discovered that the child had been bitten by a dog several months before her death. A joint-ministerial investigation was conducted in the village and an additional five bite victims were identified and vaccinated. This case, as with so many others in Haiti, would have gone unrecognized without the educational training provided by the REC.

Cambodia: The training materials were translated into Khmer by US-CDC Cambodia with technical support from FAO Cambodia, and used in two FAO training workshops in 2015. All of the successful trainees are a part of the exponential growth of rabies awareness in Cambodia and they will deliver information on rabies issues to veterinary students, dog owners and farmers. Further training is planned for 2016 for government officials.

Philippines: REC workshops were conducted by GARC for health and agriculture officials, students, teachers, veterinarians, animal health workers, midwives, rural health unit workers and nurses in Ilocos Norte and Sorsogon, GARC's project areas. Many of these graduates will work with GARC as a pool of rabies speakers in their communities.



“After knowing that rabies is a fatal yet preventable disease, I felt the burden and responsibility to share the things I learned from REC.”

Dr. Eva B. Macugay, college professor, and participant at the Ilocos Norte REC workshop

The Animal Handling and Vaccination Certificate (AVC)

In December, GARC launched its second course on the GARC Education Platform – the Animal Handling and Vaccination Certificate (AVC). The AVC course is an introduction to dog handling and vaccination, and can precede a hands-on training program.



It requires participants to have already completed the REC. This enables handlers and vaccinators to communicate with community members and dog owners effectively about rabies control. The AVC is GARC's first profession-specific course and was tested by professionals before the launch – other courses are planned for 2016.

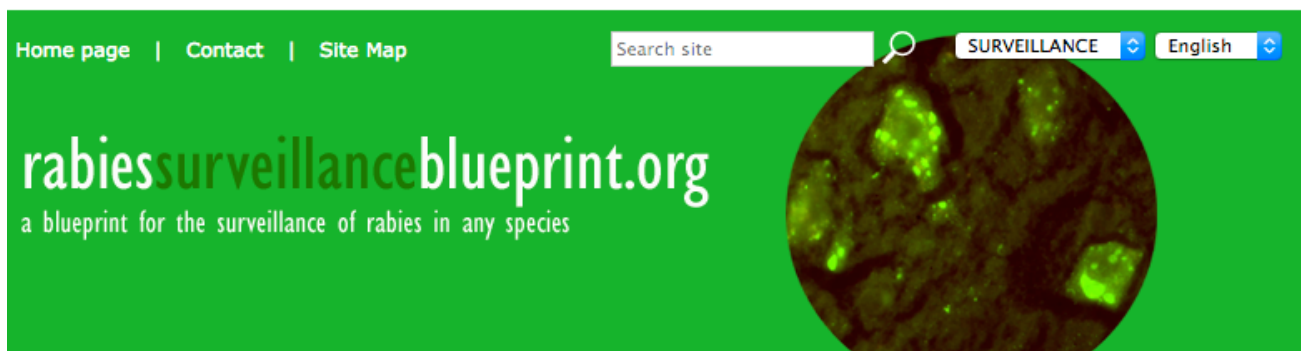
Online courses available at: <https://education.rabiesalliance.org>

SURVEILLANCE TOOLS

Rabies surveillance is vital for any rabies control or elimination program and helps to put and maintain the disease on the agenda of public and veterinary health authorities as well as policy makers. In regions of the world where rabies is still a neglected disease, surveillance is the key link in the cycle of neglect. Breaking this cycle will stop underreporting of rabies cases both in humans and animals, enable assessment of the true burden of disease in a given country and therefore result in policy changes required to tackle rabies at the source.

Rabies Surveillance Blueprint

GARC's PRP group has launched a comprehensive website, the Rabies Surveillance Blueprint, the first detailed approach covering both human and animal related aspects of rabies surveillance.



- SURVEILLANCE BLUEPRINT**
- Introduction
- Rabies Surveillance
- Minimum requirements for adequate rabies surveillance
- Laboratory rabies diagnosis
- Epidemiological analyses
- Reporting, dissemination and communication
- LINKS**
- Documents
- CONTRIBUTORS**
- The contributors

Home page >

Welcome to the Rabies Surveillance Blueprint

The First version of the Rabies Surveillance Blueprint is now complete

The Rabies Surveillance Blueprint has been developed by global rabies experts to serve as a guide for countries that would like to improve surveillance for rabies in any species.

The Blueprint brings together relevant information on rabies surveillance in an easily accessible format. It is not meant to replace existing material or national guidelines but rather is meant to serve as an easy to use guide to assist countries in understanding how to conduct rabies surveillance, as well as how to report and use the data generated to improve rabies control in any species.



PARTNER LINKS



The Rabies Surveillance Blueprint is an easy to use guide to assist countries in understanding how to conduct adequate rabies surveillance, as well as how to report and use the data generated to improve rabies control in any species. It is also available in French.

One of the big advantages over traditional printed guidelines is that the Blueprint will be regularly updated by PRP experts, and new or modified recommendations can be immediately included as they become available. Based upon an initiative of the WHO, this living document will further evolve by incorporating approved standard operating procedures for standard laboratory techniques in rabies diagnosis.

Reference: <http://rabiessurveillanceblueprint.org>

Surveillance capacity building

To improve surveillance data, GARC is providing national governments with an effective but simpler way of diagnosing rabies.

This involves providing capacity building and support in the use of the Direct Rapid Immunohistochemical Test (DRIT) to the competent authorities.

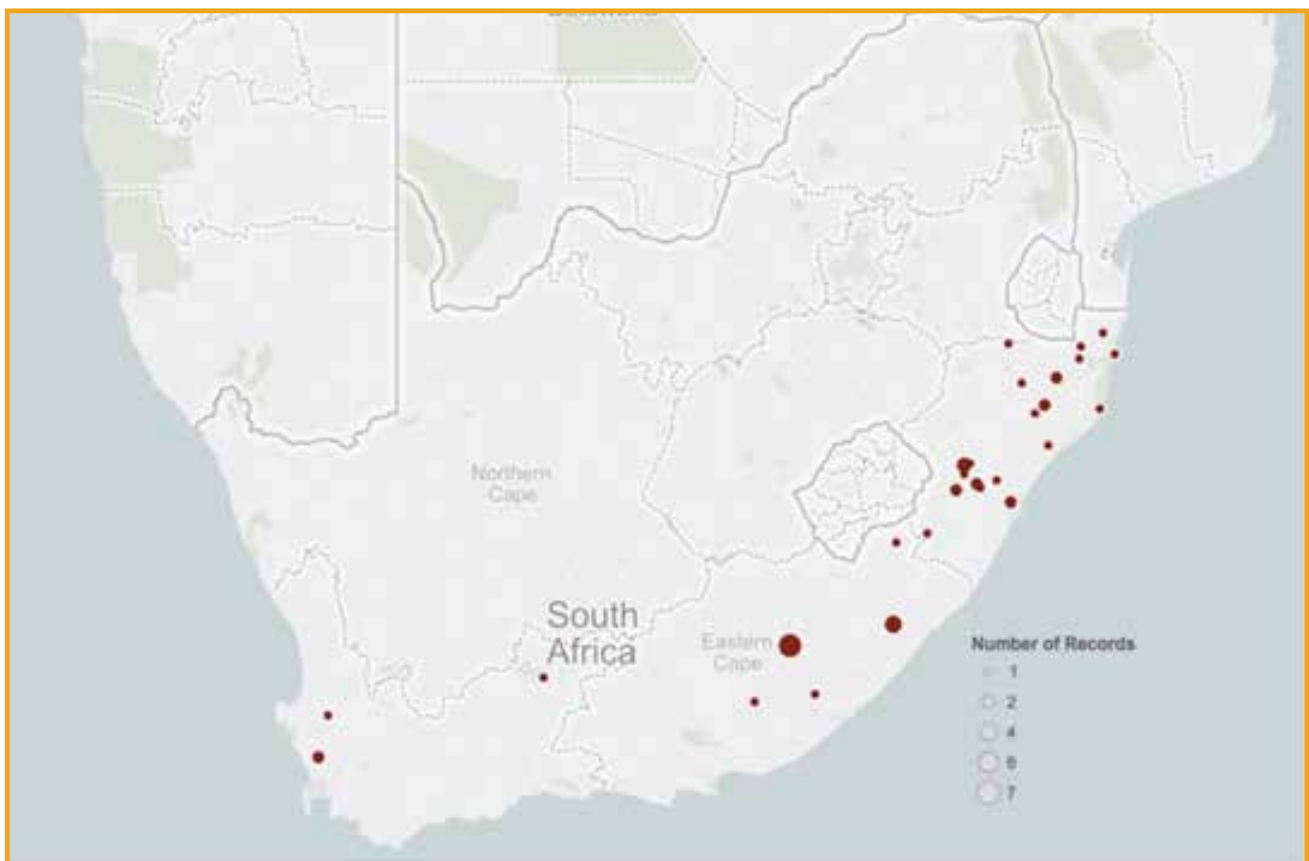
The DRIT is a diagnostic assay that detects viral antigen, enabling diagnosis of rabies cases. It needs less equipment, is cheaper to perform and is easier to interpret accurately than the standard direct fluorescent antibody test, even by less experienced readers, making it ideal for resource-limited countries, particularly for use in the field.



Diagnosics training in KwaZulu-Natal, South Africa:

- In July, a comprehensive training program for the Direct Rapid Immunohistochemical Test (DRIT) was held in the KwaZulu-Natal province of South Africa, for seven diagnostic technicians from the Allerton Provincial Veterinary Laboratory as well as a decentralized facility in Vryheid, which both form part of the governmental infrastructure in the country.
- Since the training program, the DRIT method has been implemented at these laboratories, and 179 samples from suspected rabid dogs were correctly diagnosed in 2015.
- GARC also assisted surveillance with the creation of Disease Risk Maps for all of the samples subjected to rabies diagnosis at these laboratories in 2015. These maps contain sample locations from three provinces (KwaZulu-Natal, Eastern Cape and Western Cape) within South Africa and highlight geographical areas where higher numbers of rabies cases occur so that dog vaccination efforts can be focused within those areas.

This training and support are offered as part of the country support packages under the Pan-African Rabies Control Network (PARACON) capacity building program, and are focused on strengthening rabies surveillance networks within targeted countries.



Geographical location of all of the rabies-positive samples subjected to DRIT diagnosis at either the Allerton Provincial Veterinary Laboratory or the Vryheid Veterinary Laboratory

RABIES PROGRAM PLANNING TOOLS

Canine Rabies Blueprint

The Canine Rabies Blueprint is an invaluable set of online standard operating procedures for organizations and individuals responsible for rabies control programs in their countries.

In 2015, GARC expanded access to the comprehensive toolkit by providing translations of the latest updates to the website into Spanish and French.

In order to be able to provide timely revisions and updates to these resources, GARC has chosen English, French and Spanish as the languages that will be supported going forward. GARC has been introducing the resources to both African and Asian rabies networks over the year. Having the most recent updates available in Spanish and French will help to broaden the Blueprint's accessibility and value to countries working towards rabies elimination.

Thanks to Translators without Borders for pro bono translations.

Blueprint training:

- The launch of the French versions of the resources coincided with the Blueprint workshops held at the June PARACON meeting in South Africa.
- These workshops familiarized African public and veterinary health experts with the updated resources in the revised Blueprint. With a large West African contingent participating in rabies control projects, a French version of the Canine Rabies Blueprint was essential to providing broader access to rabies control workers in this region.

Reference: <http://caninerabiesblueprint.org>



Stepwise Approach towards Rabies Elimination Tool

The Stepwise Approach towards Rabies Elimination (SARE) is a planning and evaluation tool developed by GARC and the FAO. It is a component of the Canine Rabies Blueprint, and provides a guide to countries to assess their current stage of progress and plan the next steps needed to move towards rabies elimination.

SARE workshops:

Pan-African Rabies Control Network (PARACON) training

At the first PARACON meeting for 33 African countries, the SARE was used by participants to self-assess the status of the rabies prevention and control programs in each country as well as to identify gaps and challenges. The SARE will be revisited at the next meeting in order to determine what progress has been made in each country and to consider the next steps.



The African government delegates of PARACON recommended the Canine Rabies Blueprint/SARE as useful tools in the development of national rabies control and elimination plans, with the intention of measuring progress along the different stages towards elimination.

The Stepwise Approach to Rabies Elimination (SARE) provides countries with measurable stages to progress from Stage 0 to Stage 5 in their efforts towards being canine-rabies free. Countries typically begin at Stage 0, where little or no rabies control efforts are in place, including having rabies as a notifiable disease. Once several criteria have been achieved, countries then progress to the next stage, until they eventually reach Stage 5 – being canine-rabies free.

The SARE Stage of each country has been depicted above in the form of a syringe filled with vaccine. The numbers in brackets next to the country name also describes the stage of the country as per a self-assessment performed at the first PARACON meeting.

Rabies workshop in Haiti

Haiti is one of the last countries in the Western Hemisphere that still suffers from large numbers of human rabies deaths. It is estimated that more than 10,000 people are exposed to the virus through dog bites, and several hundred people die annually.

Haitian and international partners organised a One Health workshop on the control and prevention of rabies in Haiti, from September 14 -16 in Port Au Prince. The workshop was organized as a World Rabies Day event. GARC collaborated with professionals from the Ministry of Agriculture and Natural Resources Development, Ministry of Health, Continuing Promise 2015 - U.S. Naval Ship Comfort, CDC, Christian Veterinary Mission, the Pan-American Health Organization, Humane Society International and the International Fund for Animal Welfare.

The workshop updated the existing, but outdated, national control strategy for the elimination of rabies. Key areas discussed included the incorporation of bite-case prevention and responsible pet ownership into the school curriculum of the country, the expansion of the existing surveillance network into more departments, the scaling up of dog vaccination campaigns and the distribution of human vaccine and biologics throughout the country.

GARC facilitated the use of the SARE tool, and outstanding objectives identified by the SARE Output were discussed and prioritised.



The tool will continue to be improved through the sharing of experiences by participating regions and countries, and as relevant documentation of these efforts becomes available.

COUNTRY MODELS

GARC coordinates a number of large-scale demonstration model programs in the Philippines and Indonesia, to help national and local governments, professionals and communities make concrete progress towards rabies elimination.

In 2015, the projects protected a population of 10,179,549 people from the threat of rabies, including 3,894,872 children. The public elementary education school program directly reached 253,899 children across the project sites.

Project locations:

Countries	Region/Province	Implementing Partners
Philippines	Provinces of Ilocos Norte and Sorsogon	Provincial and National Government of the Republic of Philippines
Indonesia	Nias Island, North Sumatra Province	Directorate General for Livestock and Animal Health Services, National Government of the Republic of Indonesia

The projects aim to demonstrate that rabies can be eliminated and children saved by adapting an intersectoral model to different geographical and socio-cultural settings in the Philippines and Indonesia. The approach adds key innovations to proven rabies control strategies such as the following: developing educational interventions for children; implementing mass dog vaccination campaigns; strengthening field control and laboratory diagnosis; community engagement through participatory planning and village volunteers; developing evidence-based policies; strengthening animal movement management; and collaboration and cost sharing to strengthen the national/subnational rabies programs.

The successes, data and lessons learned are integrated and shared with governments and communities around the world. To ensure sustainability, GARC's efforts focus on building the capacity of the local government structures to deliver dog rabies elimination in their provinces. At the national level in the Philippines, GARC as the official representative for non-governmental organizations at the National Rabies Prevention and Control Committee, recommended several workshops in 2015 to strengthen the national rabies program, including the following:

- National Communication Planning Workshop for Rabies;
- Materials Development Workshop; and a
- National Rabies Program Review Workshop.

GARC is also a member of the Technical Working Group to amend the provisions for the Declaration of Rabies Free Areas in the Philippines, as well as rewarding of localities with the best local rabies programs.



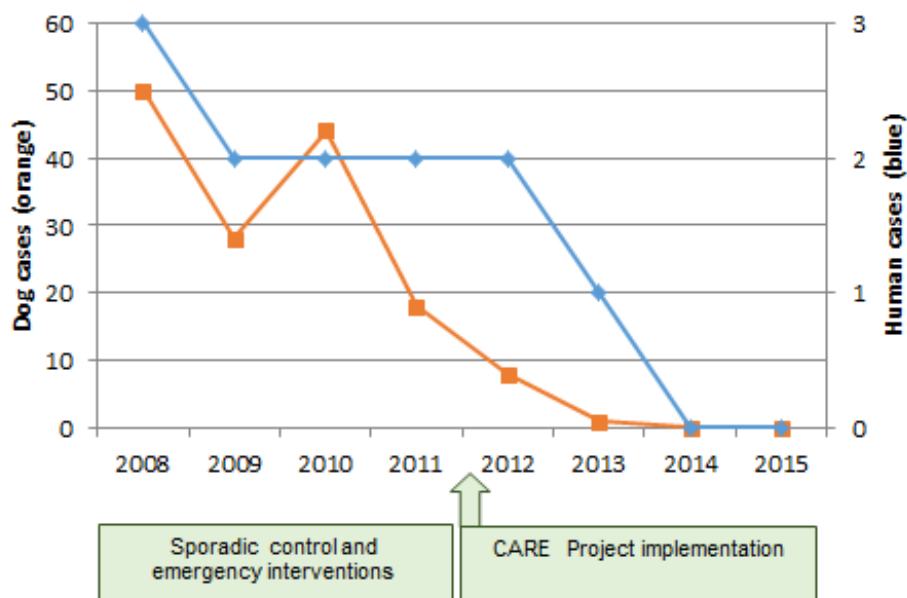
MASS DOG VACCINATION

The provincial governments, in collaboration with GARC, have conducted sustained mass dog vaccination programs in the community to control rabies at the source.

- Over 1,300 health workers, nutritionists and local government officials were trained as volunteer animal vaccinators
- 117,514 dogs were vaccinated across the three sites
- Humane dog catching training was conducted with Humane Society International – including training on dog behaviour and welfare



This strategy has proved successful:



Ilocos Norte Rabies Cases (2008-2015)

Ilocos Norte celebrates two years of being rabies free; and Sorsogon has had no human rabies cases for the last two years.

DIAGNOSIS AND SURVEILLANCE

Disease surveillance is critical to any control program. In the case of rabies, it helps to ensure prompt treatment, a quick response to any outbreaks, monitoring of an ongoing rabies control program, and that the province remains rabies free once the disease has been eliminated. The initiative has built surveillance measures into all three project sites.

In 2015:



- On-site biosafety assessment
- Procurement of additional laboratory supplies and equipment
- 164 samples tested
- Renovation of rabies laboratories
- Joint public health rapid response system set up
- Outbreak and Investigation Management training
- Integrated bite case investigations of suspect cases in 100% of Sorsogon bite centers



Rabies laboratory diagnostic training

Rabies sample collection training - distribution of sample collection kits



EDUCATION

Children are particularly susceptible to dog bites, and therefore potential exposure to rabies. Education to prevent dog bites, promote healthy relationships with dogs, and learn what to do if bitten, is an integral part of any effective rabies prevention program.

Pre-Elementary School

The Early Childhood Initiative has trained day care teachers, and pilot areas throughout the province of Ilocos Norte have been identified. In Sorsogon, 534 flip charts were distributed, reaching 160,000 students. In Nias, 105 schools and orphanages were reached, with a total of 18,182 students.



Training of teachers on the Early Childhood Initiative for schools and distribution of resources, including coloring books, activity sheets, dog masks and manuals.

Rabies Awareness Month event at St. Ignatius School, Camp Aguinaldo, for 125 preschoolers and 45 parents/guardians.



Elementary School

GARC has helped to get rabies into the school curriculum in Ilocos Norte, with 395 teachers from 380 schools trained in 2015, and 3,390 manuals distributed. The GARC-coordinated Speakers' Bureau, where members (who will all be REC certified) go into schools and communities, reached 11 schools.

Out of School

Sadly, not all children go to school. GARC has started an Out of School Youth initiative aimed specifically at this disadvantaged group.



Age-appropriate activities included puppet shows for the younger children and a 'game show' for the older ones.

World Rabies Day educational activities for 220 children aged 4-18 years, led by student volunteers.



COMMUNITY AWARENESS

GARC and its project partners conduct ongoing activities and use events such as the Philippines Rabies Awareness Month in March and World Rabies Day in September to increase awareness at the project sites as well as contributing to national rabies awareness.

The Communicating Health Advocacy Mentorship Program for community media practitioners and government information officers resulted in 33 media pieces about rabies, including print articles, radio and TV interviews, and blogs.

Number reached by communication and education campaigns in the demonstration project for 2015 = 10,185,204

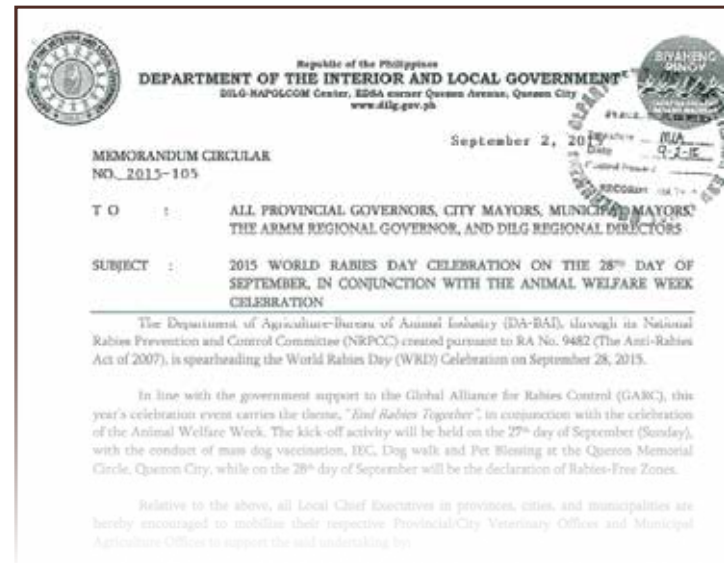


In Nias, Indonesia, 100 community leaders and residents (village chiefs, religious leaders, and rabies center volunteers) were briefed on rabies prevention and control

World Rabies Day

Through GARC collaboration with the Department of Interior Local Government, a national Memorandum Order was released through the National Rabies Prevention and Control Committee, directing all local government units to celebrate World Rabies Day on 28 September 2015.

67 World Rabies Day events were held in the Philippines, with participation from national and local governments, universities, schools and non-governmental organizations.



The 3rd Provincial Rabies Quiz Bee for elementary students from all of the 26 school districts throughout the province in Laoag City organized by the Ilocos Norte Provincial Veterinary Office (PVO) and GARC with the Department of Education and Provincial Health Office.

One Health Summit on Rabies and Food Animal Diseases conducted at the University of the Philippines Los Baños in Laguna, with over 300 participants including Barangay Captains, City/Municipal Councilors, City/Municipal Health Officers, and City/Municipal Veterinary/Agriculture Officers.





The 2nd Tayabas Run Against Rabies had 747 registered participants, with the event involving the cooperation of various agencies including students, teachers, government officials and rabies committee members



Indonesia National World Rabies Day event – Bali, Indonesia, with 160 delegates, and launch of children’s video on rabies – Desa Warna Warni (Colorful Village), used for information campaigns in schools, churches and other locations.



NETWORKS

Strong rabies control networks in Asia and Africa, the regions of the world most affected by endemic dog rabies, are essential to support national control programs. The GARC coordinated networks are structured for the progressive application of tools such as the Rabies Blueprint, its Stepwise Approach towards Rabies Elimination and the courses on the GARC Education Platform. They also provide a platform for the progress of initiatives such as the Rabies Vaccine Banks (OIE, WHO) and Country Support Packages to catalyze rabies control activities.

PARTNERS FOR RABIES PREVENTION

GARC coordinates the Partners for Rabies Prevention (PRP), an informal group consisting of the major international rabies prevention stakeholders, which provides technical and strategic support to help countries towards rabies elimination.

In 2015, work continued on health economic analyses of national rabies projects, to assess the costs of rabies control. PRP members collaborated on several key international meetings related to rabies research and program implementation, such as the PARACON launch meeting (June).

At the annual PRP meeting, participants were presented with GARC's updated strategy. Working groups were formed to assist with the delivery of this strategy, under the categories of surveillance, progress towards elimination, vaccination planning, dog population management, health economics modeling, advocacy, education and training platforms, and strategic planning.

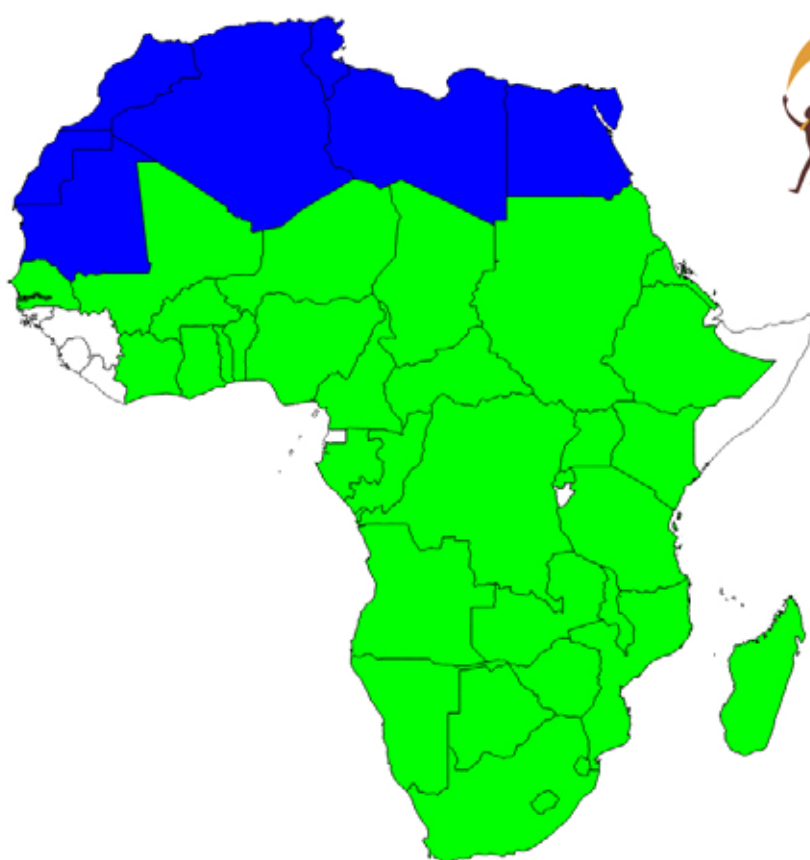
PRP members are also important collaborators on the newly launched End Rabies Now campaign, and continued their efforts to bring World Rabies Day to their networks.



PAN-AFRICAN RABIES CONTROL NETWORK

The Pan-African Rabies Control Network (PARACON) was established by GARC in 2014, merging existing networks and uniting scientific expertise with planning and practical support to help countries to progress towards elimination. PARACON, with the support of industry, animal welfare NGOs and the tripartite (WHO, OIE and FAO), creates the capacity to assist governments and other decision-makers to commit to improved rabies control and elimination programs within their country and region.

The inaugural meeting of the Pan-African Rabies Control Network was held in South Africa in June, with representatives from 33 African countries.



Green: Countries represented at first PARACON meeting

Blue: Collaborating MEEREB (Middle East and Eastern Europe Rabies Expert Bureau) network

The meeting focused on interactive discussions and workshops, whilst updating country representatives on the tools available to aid them in developing and implementing sustainable rabies intervention strategies, including the Rabies Educator Certificate, the Rabies Blueprint and its SARE. Experts from various global organizations, institutions and industry participated in the discussions and shared their experience and expertise. The interactive sessions helped countries to identify their current position on the SARE scale.

Development of an African Epidemiological Bulletin

In order to facilitate data capture and improve reporting, Country Reports were submitted by country representatives, as a pre-requisite to attend PARACON meetings. The Country Reports have been used as the foundation for an online, freely accessible, African rabies epidemiological bulletin that will help countries to monitor and evaluate progress towards elimination, to promote successes, and help to secure commitment from stakeholders, decision-makers and governmental officials towards an effective rabies control strategy.

PARACON aims to set the trend globally by collaborating with other regional rabies networks, and establishing guidelines for them to replicate. The standardization of materials, elimination targets, requirements and procedures will ensure not only an effective regional network, but also a unified approach to global rabies control and elimination. Already, the Country Report templates developed to gather essential surveillance and epidemiological data have been shared amongst other regional networks, including MEEREB, West and Central African Laboratory Network (RESOLAB), South Asian Association for Regional Cooperation (SAARC) and the Association of Southeast Asian Nations (ASEAN). PARACON is also working in close collaboration with the WHO in order to make the data gathered available within the WHO Global Health Observatory.

Country Support Packages

To initiate or support rabies intervention strategies within African countries, GARC has developed, through PARACON, and in collaboration with other international organizations such as the FAO, OIE, WHO and World Animal Protection, country support packages in a variety of different formats. These packages are aimed at providing essential materials and training to assist national programs towards rabies control and elimination. The packages are targeted at four different focus areas of a successful rabies intervention program, namely advocacy, surveillance, education and vaccination campaigns. In 2015, World Rabies Day communication packages, Rabies Educator Certificate workshops and surveillance training workshops were provided to selected countries, and more training is scheduled for 2016.

Reference: Scott, T. P., Coetzer, A., de Balogh, K., Wright, N., & Nel, L. H. (2015) The Pan-African Rabies Control Network (PARACON): A unified approach to eliminating canine rabies in Africa. [Review]. Antiviral Res, 124, 93-100. doi: 10.1016/j.antiviral.2015.10.002



ASIAN REGIONAL NETWORK

On February 25-26, 2015 in Bangkok, Thailand, GARC hosted the 1st Asia Regional Workshop on Rabies Elimination. The meeting was the first in a series supported by the UBS Optimus Foundation and will contribute to ASEAN efforts towards their goal of rabies elimination from the region by 2020. The meeting aimed to provide a platform for building partnerships, facilitating information sharing, and contributing to capacity building in ASEAN countries for rabies prevention and control. It brought together 35 participants from seven countries, including government representatives, academic institutions, animal welfare organizations and the business sector, and featured workshops on key tools such as the Rabies Blueprint. It also provided an opportunity for country feedback on these approaches, an exchange of information and the sharing of experiences and lessons learned in rabies control in the region.

The first GARC Education Platform course, the Rabies Educator Certificate, was officially launched at this meeting. A workshop on the SARE was held to introduce countries to the concept of a stepwise approach to rabies control and elimination. Participants were asked to carry out a rapid assessment of their respective countries' efforts for rabies prevention and control, and there is recognition that the countries have different levels of progress in addressing rabies, and that there are large differences in resources and capacities across the countries.

With the increased recognition of available resources, in terms of information, initiatives and potential partnerships, a foundation has been built on which to advance ASEAN's elimination plans in the region. In 2016, GARC will provide capacity building support to individual countries in Asia.

RABIES NETWORKS AROUND THE WORLD

In 2015, besides PARACON, GARC was involved in other international rabies networks and meetings, presenting its strategy and resources to support rabies elimination efforts and conducting workshops to help these networks use tools such as the SARE, REC and the Rabies Blueprint.

Spring Gombe presented GARC's work to the World Assembly of the OIE on May 24-29 in Paris. GARC is an NGO in official relations with the OIE, and as such is invited to present its work in collaboration with OIE to the delegates (Ministers of Veterinary Medicine/Animal Health or Chief Veterinary Officers) of the 180 OIE member States. This allows opportunity for expansion of the scope of work and partnerships. Highlighted in the presentation were the launch of PARACON, the various World Rabies Day events, and the proposed strategic direction for 2016.



Asia:

- February (Bangkok, Thailand): GARC hosted the 1st Asia Regional Workshop on Rabies Elimination
- March (Chiang Mai, Thailand): ASEAN Expert Group on Communicable Diseases/ASEAN Sectoral Working Group on Livestock joint consultative workshop – Professor Louis Nel helped to shape the latest version of the ASEAN Rabies Elimination Strategy, and GARC is an integral part of ASEAN’s action plan to eliminate rabies, going forward.
- March (Kuala Lumpur, Malaysia): 6th Pan Commonwealth Veterinary Conference of the Commonwealth Veterinary Association – Professor Louis Nel presented an overview of the global rabies situation
- August (Colombo, Sri Lanka): GARC contributed to the Workshop on Prevention and Control of Rabies in SAARC Countries. Professor Nel conducted sessions on the SARE, REC and Blueprint, and presented the African PARACON initiative.
- August (Hanoi, Vietnam) - International Conference on Zoonotic Disease Prevention and Control Addressing Health Threats Posed by Zoonotic Diseases: Regional and Global Collaboration and Technical Exchange
- October (Sapporo, Japan)-The 6th Asia-Pacific Workshop on Multi-Sectoral Collaboration for the Control of Zoonoses. Dr Loida Valenzuela of the Provincial Government of Ilocos Norte, a GARC CARE project partner, presented on multi-sectoral collaboration in the implementation of rabies control at the local level.

Middle East and Eastern Europe:

GARC is supporting Fondation Mérieux, which coordinates the Middle East & Eastern Europe Rabies Expert Bureau (MEEREB). MEEREB works as an implementation platform in cooperation with other regional initiatives in Asia and Africa coordinated by GARC.

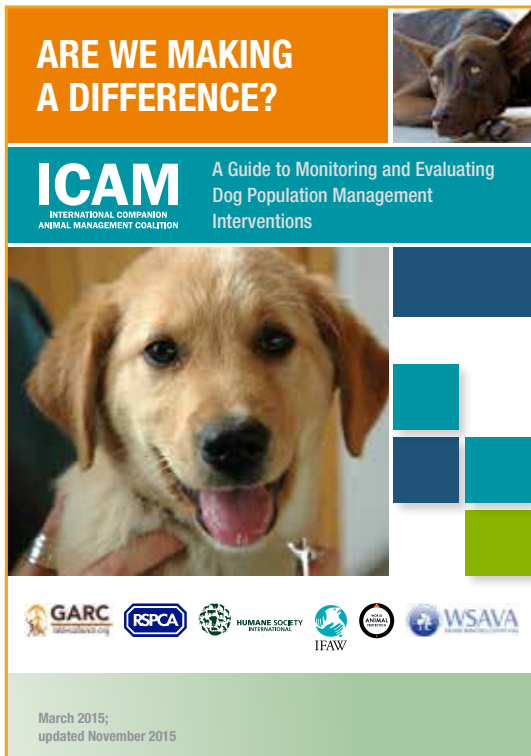
Rabies experts from eleven Middle Eastern, North African and Eastern European countries (Croatia, Georgia, Iran, Iraq, Tajikistan, Romania, Serbia, Morocco, Tunisia, Algeria and Ukraine) met in April 2015 in Lyon, France. They discussed their national rabies situations, determined strategic ways forward, and highlighted the importance of a One Health approach for rabies elimination. Other activities included the promotion of World Rabies Day (WRD) activities with GARC’s support. Nine countries organized WRD activities with successful engagement from key stakeholders from the animal and human sectors.

Americas:

- September (Brasilia, Brazil): At the 15th Meeting of Rabies Program Directors of the Americas (REDIPRA), rabies program managers and representatives from 28 countries across the Americas met to discuss progress and the next steps towards rabies elimination in the region. The meeting was attended by Dr Louise Taylor of GARC, who presented GARC’s activities undertaken to support rabies elimination in the Americas.
- October (Fort Collins, USA): The 26th Rabies in the Americas (RITA) conference was attended by participants from across the Americas and the world. Professor Nel presented on “Pan-African Rabies Control Network (PARACON): A unified approach to canine-rabies elimination in Africa”, and Dr Louise Taylor on the “Reassessment of the Burden of Canine Rabies and its value to advocacy efforts”. GARC also held a meeting here to update participants on recent activities of the Partners for Rabies Prevention that were of relevance to the Americas.

ICAM coalition

GARC is part of the International Companion Animal Management Coalition (ICAM), which consists of six organizations working on humane and effective companion animal population management. In March ICAM organized its Second International Conference on Dog Population Management in Istanbul, Turkey, where discussions focused on four overarching issues: 1) population dynamics, 2) government collaboration, 3) DPM program monitoring, and 4) education and community engagement.



GARC also contributed to a new guidance manual that was launched at the conference: *Are we making a difference? A Guide to Monitoring and Evaluating Dog Population Management Interventions*, which is accompanied by several online tools for evaluating individual programs.

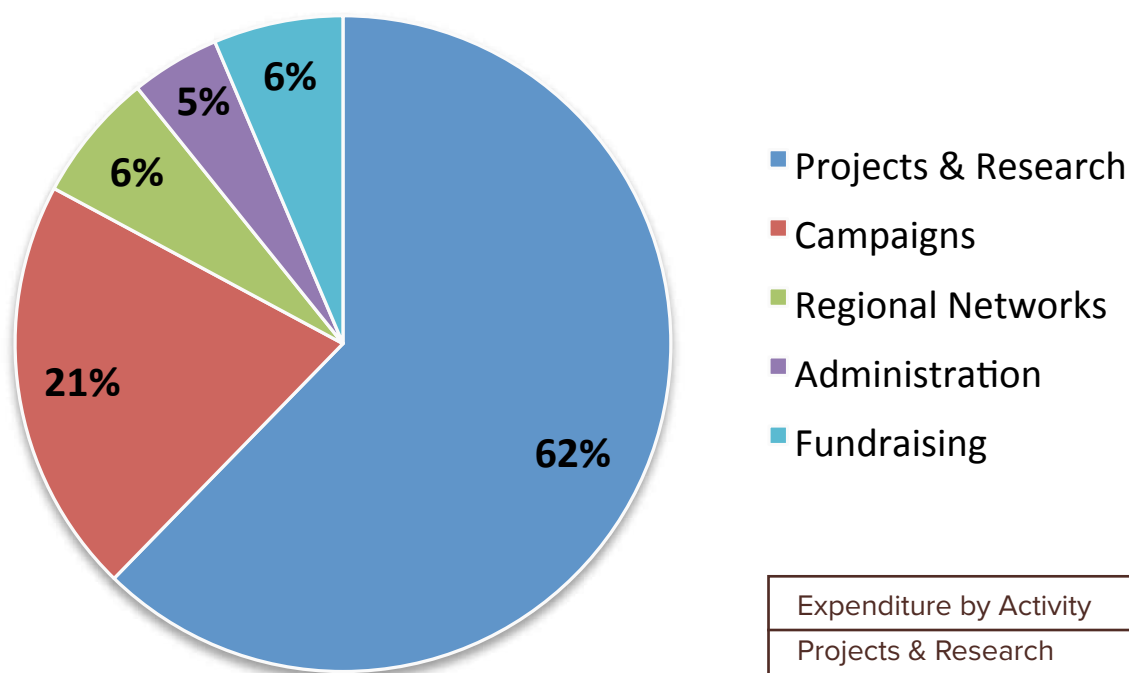


FINANCIAL ACCOUNTS 2015

Year in Transition

GARC undertook a strategic planning exercise, with the leading rabies control stakeholders, to assess how to maximize the organization’s impact over the next 3-5 years, following the success of the large scale dog vaccination demonstration programs. The outcome of the consultation resulted in GARC transitioning its programmatic activities away from these large scale demonstration projects, to focus on building the capacity of national government rabies control programs alongside the development and strengthening of regional rabies control networks. At the global level, GARC developed an advocacy campaign to raise awareness of the disease.

As a result of this shift in activities, in 2015, GARC’s total revenue was \$682,745, a reduction of 50% from 2014, given the winding down of the high revenue programmatic activities which frequently involved large sub-grants to our partner organizations. This reduction was planned and has not adversely impacted the organization. Grant funding accounted for over 99% of the total revenue of the organization in 2015. Total liabilities and net assets at the end of December are \$955,928.



Expenditure by Activity	Total
Projects & Research	\$960,048
Campaigns	\$316,616
Regional Networks	\$98,311
Administration	\$67,634
Fundraising	\$98,439
Total	\$1,541,048

Focus is now on attracting funds and new donors to support national capacity building efforts. While it is a challenging area to attract new funding given the neglected status of rabies, GARC is well positioned from a knowledge and fundraising perspective, with the recently launched global advocacy campaign assisting with this effort.

THANK YOU

The value of volunteers– and a huge thank you

Our progress towards rabies elimination would not be possible without our supporters and partners, and we would like to thank them for their continued support to end this disease.

GARC has always benefited enormously from the work of generous volunteers from within and outside the rabies field who have donated their time and talents to support improvements to our tools and increase our outreach. World Rabies Day event holders have raised awareness of rabies prevention all across the world. Graduates of our Rabies Educator Certificate course have gone on to teach others about rabies prevention.

The best information in the world is useless if people cannot access or understand it. Our community has helped us to translate the World Rabies Day logo into 49 languages. To translate our newsletter into French and Portuguese, Betty Dodet, Brigitte Dunais and Phyllis Romijn, all active rabies and public health specialists, have donated many, many hours of time for which we are very grateful.

For our larger projects such as the translation of the Canine and Surveillance Blueprint, we partnered with FAO Bamako in Mali and the European Commission, and have recently started to work with Translators without Borders, a non-profit that allows translators to donate their talents to support NGOs such as ours. Since January 2015, Suzanne Assenat, Jacques Barrat, Lizette Britz, MultiPro, Murielle Brugoux, Nora Glembocki, Benoit Grommersch, Daniela Helguera, Iadynaty, Eric Ragu and Irene Vitali have all provided invaluable translations and proofreading services.

So, from all at GARC we say to everyone in the rabies prevention community:



Together we can beat rabies!

ABBREVIATIONS

ASEAN - Association of Southeast Asian Nations

AVC - Animal Handling and Vaccination Certificate

CDC - US Centers for Disease Control and Prevention

FAO - Food and Agriculture Organization of the United Nations

ICAM - International Companion Animal Management Coalition

MEEREB - Middle East and Eastern Europe Rabies Expert Bureau

OIE - World Organisation for Animal Health

PARACON - Pan-African Rabies Control Network

PRP - Partners for Rabies Prevention

REC - Rabies Educator Certificate

SAARC - South Asian Association for Regional Cooperation

SARE - Stepwise Approach towards Rabies Elimination

WHO - World Health Organization

WRD - World Rabies Day

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